IN THE CLAIMS

Please amend the claims as follows:

Claims 1-8 (Canceled).

Claim 9 (New): A pressure sensor comprising:

an optical wave guide;

a first reflecting element formed in a portion of the optical wave guide, the portion being submitted to pressure;

means for lateral support of the portion of optical wave guide, wherein the portion of optical wave guide is submitted to a compression prestress with a small value compared with a measurement range of the sensor;

a housing; and

a membrane that is subjected to pressure and closes the housing,

wherein the sensor acts in compression;

wherein the portion of the optical wave guide is placed in the housing and comprises first and second ends that are fixed to the membrane and to the housing respectively, and

wherein the means for lateral support comprises means for preventing buckling of the portion of optical wave guide when compressed.

Claim 10 (New): A sensor according to claim 9, wherein the means for preventing buckling of the portion of optical wave guide comprise a tube, which is placed in the housing, and surrounds the portion of optical wave guide and comprises a first end that is at a spacing from the membrane and a second end that is fixed to the housing, and rings that are arranged one after the other in the tube between the housing and the membrane, and that are spaced

from each other by elastic elements, the portion of optical wave guide passing through the rings, and the portion of optical wave guide being free to slide in the rings.

Claim 11 (New): A sensor according to claim 10, wherein the elastic elements comprise elastic toric spacers.

Claim 12 (New): A sensor according to claim 10, wherein the elastic elements are made from an elastic material with a low coefficient of friction.

Claim 13 (New): A sensor according to claim 13, wherein the elastic material is cellular polytetrafluorethylene.

Claim 14 (New): A sensor according to claim 9, wherein the means for preventing buckling of the portion of optical wave guide comprises a single ring that is fixed and integral with the housing and that guides the portion of optical wave guide over an entire length of the sensor.

Claim 15 (New): A sensor according to claim 9, wherein the means for preventing buckling of the portion of optical wave guide comprises rigid washers arranged one after the other in the housing, along the portion of optical wave guide, the portion of optical wave guide passing through the rigid washers, together with elastic elements that are arranged one after the other in the housing, between the housing and the membrane, alternate with the rigid washers, and that are integral with the rigid washers.

Claim 16 (New): A sensor according to claim 15, wherein the elastic elements form a single block of elastic material that traps the portion of optical wave guide.